THE INVENTION CLAIMED IS:

1. A method for fabricating a semiconductor package, comprising:
providing a substrate in a strip format;
attaching semiconductor devices in a strip format to the substrate;
applying a thermal interface material to the semiconductor devices;
attaching a flat panel heat spreader to each semiconductor device;
encapsulating the semiconductor devices with open encapsulation, leaving the surface of the flat panel heat spreader opposite the substrate externally exposed; and
singulating individual semiconductor packages from the strip format.

2. The method of claim 1 wherein the heat spreader is a pre-cut flat panel configuration.

3. The method of claim 1 wherein the heat spreader is a continuous flat panel heat spreader attached over substantially the entire strip format.

4. The method of claim 3 further comprising cutting the continuous flat panel heat spreader into individual heat spreader panels following attaching the flat panel heat spreader.

5. The method of claim 3 further comprising dispensing an encapsulant for encapsulating the semiconductor devices and for attaching the flat panel heat spreader prior to attaching the flat panel heat spreader.

6. A method for fabricating a semiconductor package, comprising:
providing a substrate in a continuous strip format;
attaching semiconductor devices in a continuous strip format to the substrate;
applying an underfill between the semiconductor devices and the substrate;
applying a thermal interface material to the upper faces of the semiconductor devices opposite the substrate;
attaching a flat panel heat spreader to each semiconductor device by means of the thermal interface material;
curing the thermal interface material;
encapsulating the semiconductor devices and portions of the flat panel heat spreader with open encapsulation, leaving the surface of the flat panel heat spreader opposite the substrate externally exposed;
attaching ball grid arrays to the substrate opposite the semiconductor devices; and

singulating individual semiconductor packages from the continuous strip format.

7. The method of claim 6 wherein the heat spreader is a pre-cut flat panel configuration.

8. The method of claim 6 wherein the heat spreader is a continuous flat panel heat spreader attached over substantially the entire continuous strip format.

9. The method of claim 8 further comprising cutting the continuous flat panel heat spreader into individual heat spreader panels following the steps of attaching the flat panel heat spreader and curing the thermal interface material.

10. The method of claim 8 further comprising dispensing an encapsulant for encapsulating the semiconductor devices and for attaching the flat panel heat spreader prior to attaching the flat panel heat spreader.

11. Semiconductor packages in a strip format, comprising:

a substrate in a strip format;

semiconductor devices attached in a strip format to the substrate;

a thermal interface material applied to the semiconductor devices;

a flat panel heat spreader attached to each semiconductor device;

the semiconductor devices being encapsulated with the surface of the flat panel heat spreader opposite the substrate being externally exposed; and

the packages having indicia characteristic of strip open encapsulation.

12. The semiconductor packages of claim 11 wherein the flat panel heat spreader is a pre-cut flat panel configuration.

13. The semiconductor packages of claim 11 wherein the flat panel heat spreader is an individual heat spreader panel cut from a continuous flat panel heat spreader.

14. The semiconductor packages of claim 11 wherein the flat panel heat spreader is a continuous flat panel heat spreader attached over substantially the entire strip format.

15. The semiconductor packages of claim 11 further comprising individual semiconductor packages singulated from the strip format and having indicia characteristic of strip singulation.

16. Semiconductor packages in a continuous strip format, comprising:

a substrate in a continuous strip format;

semiconductor devices attached in a continuous strip format to the substrate;

an underfill between the semiconductor devices and the substrate;

a thermal interface material applied to the upper faces of the semiconductor devices opposite the substrate;

a flat panel heat spreader attached to each semiconductor device by means of the thermal interface material;

the semiconductor devices and portions of the flat panel heat spreader being encapsulated with the surface of the flat panel heat spreader opposite the substrate being externally exposed;

ball grid arrays attachaed to the substrate opposite the semiconductor devices; and

the packages having indicia characteristic of strip open encapsulation.

17. The semiconductor packages of claim 16 wherein the flat panel heat spreader is a pre-cut flat panel configuration.

18. The semiconductor packages of claim 16 wherein the flat panel heat spreader is individual heat spreader panels cut from a continuous flat panel heat spreader.

19. The semiconductor packages of claim 16 wherein the flat panel heat spreader is a continuous flat panel heat spreader attached over substantially the entire strip format.

20. The semiconductor packages of claim 16 further comprising individual semiconductor packages singulated from the strip format and having indicia characteristic of strip singulation.